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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/299,965	04/26/1999	? ?	5457OUSA3A	3907

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EXAMINER	
AFTERGUT, JEFF H	

ART UNIT	PAPER NUMBER
1733	17

DATE MAILED: 04/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/299,965	GEORGE ET AL	
	Examiner	Art Unit	
	Jeff H. Aftergut	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7-14 and 16-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7-14 and 16-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7, 9, 10, 19, 20, 22, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Frauenglass et al.

Frauenglass et al suggested that it was known at the time the invention was made to mix a thermoplastic resin and a thermosetting resin and utilize the same as an adhesive for joining mechanical fasteners permanently. More specifically, the reference taught that a combination of the mixture of a thermoplastic resin including polyester thermoplastic resins and an anaerobic thermosetting resin which was a methylacrylate resin would have been mixed together and would have been applied upon threaded components of fasteners in order to permanently secure the components together, see column 1, lines 63-column 2, line 2, column 2, lines 14-35, column 3, lines 66-75, column 5, lines 43-45, column 6, lines 49-70, column 6, line 71-column 7, line 25, and column 8, lines 13-19. the reference made it clear that the composition was storage stable for 24 hours and that the curing of the resin did not take place until one removed the oxygen from the environment in which the adhesive material was exposed. It should be noted that the reference suggested that the reference suggested that the adhesive would have been useful for nuts, bolts, screws or other threaded mechanical fasteners.

Regarding claim 20, it is not seen how radiation curing the adhesive would have resulted in a materially different end product and therefore it is deemed that the reference anticipates the claim (i.e. how is the article altered by reciting that the adhesive was cured with UV radiation).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-3, 7, 9, 10, 13, 16, and 18-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of Frauenglass et al.

Cohen taught that it was known at the time the invention was made to apply a slow curing thermosetting adhesive upon the two components of a hook and loop type mechanical fastener wherein the fastener would have been useful for joining items together once assembled. The fastener was repositionable until the thermosetting resin was cured. The reference suggested that suitable adhesive useful for the operation included epoxy resins wherein a catalyst was incorporated in the composition to facilitate the cure of the resin. The reference failed to expressly suggest that one skilled in the art would have incorporated a thermoplastic resin in combination with this slow curing epoxy resin for the fastener.

Frauenglass et al suggested that as an alternative to an epoxy resin one skilled in the art would have selected a thermosetting composition for the mechanical fastener (note that a hook and loop arrangement would have been understood to be a mechanical fastener) which included a mixture of a thermoplastic compound and a thermosetting anaerobic resin. The applicant is referred to paragraph 2 above for a complete discussion of the reference to Frauenglass et al. It

would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the adhesive composition of Frauenglass et al in the process of Cohen for making a mechanical fastener for attaching substrates together.

5. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 4 further taken with Alexander et al (newly cited) or Bachmann et al (newly cited) or Pearce, Jr (newly cited).

While the reference to Frauenglass et al suggested the overall adhesive composition which was useful as an alternative to an encapsulated epoxy resin (and Cohen suggested the use of an epoxy resin in conjunction with the fastener), the reference failed to teach that one would have recognized that an epoxy resin would have been an alternative material to the anaerobic adhesive material in the operation (where the thermosetting resin was mixed with the thermoplastic resin). However, in the art of applying adhesive to mechanical fasteners, it was known per se to apply as an alternative to an anaerobic adhesive an epoxy adhesive material as evidenced by any one of Alexander et al (column 4, lines 29-36) or Bachmann et al (column 3, line 47-column 4, line 17), or Pearce, Jr (column 4, lines 23-46). The references to any one of Alexander et al, or Bachmann et al, or Pearce, Jr suggested that those skilled in the art would have recognized that for permanently securing mechanical fasteners together one skilled in the at would have found that the epoxy resins would have been a functionally equivalent alternate expedient to anaerobic adhesive materials. Because it was an art recognized equivalent to anaerobic thermosetting adhesive materials, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the epoxy adhesive for the anaerobic

adhesive as suggested by any one of Alexander et al, Bachmann et al or Pearce, Jr in the process and mechanical fastener as set forth above in paragraph 4.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 4 further taken the Modern Plastics Encyclopedia 1983-84 (newly cited) or the admitted prior art (newly cited).

While the reference to Frauenglass et al suggested that those skilled in the art at the time the invention was made would have incorporated a thermoplastic polyester for the thermoplastic component of the adhesive, there is no express teaching that the polyester employed therein was amorphous (semi-crystalline) as defined. The applicant is advised, however, that those skilled in the art at the time the invention was made would have known that semi-crystalline polyester material were available as polyester material for use in composite laminate as suggested by the Encyclopedia of Modern Plastics and the admitted prior art. The applicant is advised that both suggested the existence of semi-crystalline polyesters as a useful thermoplastic polyester material. additionally, because the reference to Frauenglass et al suggested the use of thermoplastic polyesters, it certainly would have been within the purview of the ordinary artisan to test and select a suitable thermoplastic polyester material for use in the above mentioned fastener system. It would have been obvious to select a suitable polyester material including those known polyesters which were amorphous as suggested by the Encyclopedia of Modern Plastics 1983-84 and the admitted prior art in the mechanical fasteners as set forth above in paragraph 4.

7. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 4 further taken with Melbye et al (newly cited).

The reference to Cohen suggested the overall use of a mechanical fastener of the type which employed two mating surfaces with a plurality of extending elements (hooks) which interconnected into the complementary surface of the loops on another substrate, however there is no evidence of record to suggest that one skilled in the art at the time the invention was made would have utilize a mushroom shaped fastener system. The reference to Melbye suggested that those skilled in the art at the time the invention was made would have formed the hook surfaces of the hook and loop fasteners from mushroom shaped filaments which were shaped in an extrusion operation. Such was found to be less expensive than the traditional hook configuration for hook and lop fasteners as expressed by Melbye. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the mushroom shaped filaments of the fastener component of Melbye (as such was less expensive to manufacture) wherein the same was manufactured in a extrusion and shaping operation as suggested by Melbye in the process of making a hook and loop fastener component as set forth above in paragraph 4.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 4 further taken with Lu et al (newly cited) or Appeldorn (newly cited).

While the reference to Cohen suggested that those skilled in the art at the time the invention was made would have incorporated a hook and loop fastener component for the mechanical fastener, other repositionable fasteners were known to the artisan as an alternative type of fastener for mechanical fasteners which included those containing protrusions which were mated with recesses in the complementary component of the fastener as evidenced by Lu et

al or Appledorn. More specifically each of Appledorn or Lu et al suggested that those skilled in the art at the time the invention was made would have incorporated a fastener component which included a recessed component which mated with a protruding component and suggested that this arrangement for a fastener would have been an alternative construction for the fastener to the hook and loop arrangement of Cohen. Because it would have been viewed as a functionally equivalent alternate expedient to the use of a hook and loop fastener arrangement, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the arrangement of protruding components which were mated with complementary recessed components of another fastener component in place of the hook and loop arrangement of Cohen in the mechanically attached adhesive fastener as set forth above in paragraph 4.

9. Claims 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 5 further taken with Crivello et al (newly cited).

The references as set forth above suggested that those skilled in the art at the time the invention was made would have incorporated an epoxy resin for the thermosetting component, however they failed to teach the use of a functionalized thermoplastic (wherein the functional groups associated with the thermoplastic were thermosetting groups like epoxy). Additionally, there is no disclosure of the use of radiation to cure the resin employed in the operation. However, one skilled in the art of resin formulation would have known that as an alternative to epoxy resins one would have suitably employed a functionalized thermoplastic wherein the functional group associated with the resin included a thermosetting resin as evidenced by Crivello et al. the reference to Crivello additionally suggested that the resins would have been cured with radiation curing once the assembly was set in the desired position. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Crivello as an alternative to use of an epoxy resin alone as such would have afforded one the ability to cure the material with radiation (rather than just either having to apply heat or wait until the resin had hardened) in the operation of making a fastener component as set forth above in paragraph 5.

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, 7-14 and 16-28 have been considered but are moot in view of the new ground(s) of rejection.

The applicant is advised that the newly cited reference to Frauenglass et al suggested the blending of a thermoplastic resin and a thermosetting resin in conjunction with an adhesive material useful for a mechanical fastener.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 703-308-2069. The examiner can normally be reached on Monday-Friday 6:30-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
April 28, 2003